

HEREDITARY BLINDNESS IN MISSOURI

By

H. D. LAMB, M.D.

ST. LOUIS

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Blindness is that visual handicap which limits the individual's usefulness to society.

This handicap is early manifested in the blind child by his inability to keep up in the usual school class. The upper limit of blindness is on an average 20/80, or making out at no greater distance than 20 feet a letter that should be normally distinguished at 80 feet. This limit naturally varies considerably with the intelligence and spirit of the child, being as high as 20/50 in a dull, indifferent pupil and again 20/120 in a bright ambitious scholar.

At the Missouri School for the Blind 139, or 25 per cent., of the 556 pupils attending school in the last 23 years (which is as far back as the school medical records go) have lost their sight through hereditary blindness.

In 1924, through the efforts of the Missouri Association for the Blind, special classes were started in the St. Louis schools for semi-sighted pupils. The vision of these pupils varies between 20/50 and 10/200, which is sufficient to enable them to study books with large type and to distinguish large writing on the blackboard. There are included in our figures 13 cases of these semi-sighted scholars, handicapped by hereditary ocular changes; 13 is 26 per cent. of the 50 pupils on whom we have accurate ocular records in these special classes. (In addition, 4 scholars in the special classes had previously attended the Missouri School for the Blind and had consequently been counted before.)

We have tabulated in several tables the 152 pupils blinded from the well recognized heredi-

tary ocular changes, as found at the Missouri School for the Blind and in the classes for the semi-sighted in the St. Louis schools.

Table No. 1. *CAUSES OF HEREDITARY BLINDNESS IN 606 SCHOOL CHILDREN*

	Number of		Total	Per cent. of 606
	Boys	Girls		
Congenital cataract	32	22	54	9.0
Hydrophthalmus	22	9	31	5.1
Microphthalmus	13	11	24	4.0
Retinal degeneration	13	12	25	4.0
Retinitis pigmentosa	7	2	9	1.5
Anophthalmus	3		3	0.5
Aniridia	1	2	3	0.5
Dislocation of lenses	1	1	2	0.3
Coloboma of the iris.....		1	1	0.2
Total	92	60	152	25.1

The term hydrophthalmus as used by the German writers would seem preferable to buphthalmus in designating conditions of congenital glaucoma since the term buphthalmus can also be applied to the enlarged eyeballs produced in young children by extensive corneal ulcers.

In the writer's observations the majority of cases of retinal degeneration among children and adolescents could be definitely differentiated from cases with retinitis pigmentosa. In these tables the term retinal degeneration is used where the retinal changes involve the central parts of the fundi as early as the more lateral parts and these changes are characterized ophthalmoscopically by stippling or fine mottling and the presence of only a few small, compact pigment masses.

Table No. 3. AMOUNTS OF VISION IN THE HEREDITARY BLIND

The family histories of pupils in the semi-sighted classes not being available, Table No. 4 includes only the 139 cases of hereditary blindness at the Missouri School for the Blind.

Table No. 5 shows the size of the communities from which came the 139 pupils with hereditary blindness at the Missouri School for the Blind.

In Table No. 6 we tabulate the number, vision, age and sex of 49 hereditary blind adults among 638 adults in St. Louis having vision less than 20/450. We should expect the relative amount of hereditary blindness among blind adults to be much less than among blind children.

	Total	Vision 0— L. P. L. P.	P. 10/450	Ages 10— 20— 20/450 30	30— 40— 40 50	50— 60— 60 70	70— 80— 80 90	90— 100— 100 over	Sex Male Fe.
Congen. Cataract.....	6	3	1	2	3	1	1		3 3
Hydrophthalmus	5	3	2		3	1	1		2 3
Microphthalmus	2	2		1	1				1 1
Retinal degeneration....	16	10	5	1	1	2	3	4	8 8
Retinitis pigmentosa...	20	10	8	2	1	4	3	7	13 7
Total.....	49	28	16	5	9	7	9	13	5 3
Percentage.....	7.7	57.1	32.7	10.2					27 22
	of		of						55.1 44.9
	638		49						

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For purposes of comparison there is appended Table No. 7, showing the number of cases blinded with the different forms of hereditary blindness in 1100 children observed over a period of 10 years at a number of London schools for the blind by Mr. N. Bishop Harman (British Medical Journal, 1914, 2, p. 390).

Table No. 7. HEREDITARY BLINDNESS AMONG 1100 BLIND SCHOOL CHILDREN IN LONDON, WITH AMOUNT OF SYPHILIS IN RELATION AND NUMBER OF FAMILIAL CASES, AS REPORTED BY MR. N. BISHOP HARMAN.

Cause of blindness	No. of cases	Syphilis certain	Syphilis probable	Familial cases	Per Cent. of 1100
Congenital cataract..	100	11			9.0
Hydrophthalmus....	17	5	2		1.5
Microphthalmus.....	40	2		10	3.6
Albinism.....	25	2			2.3
Retinitis pigmentosa.	21		1	8	1.9
Anophthalmus.....	2				.2
Aniridia.....	6				.6
Dislocation of lenses	19	1			1.7
Coloboma of iris....	10				1.0
Total	240	21	3	18	21.8
Percentage of 1100....	21.8%				

Table No. 8 shows the amount of hereditary blindness found by Dr. H. Frese among 849 young students at the Federal Institute for the Blind at Steglitz-Berlin. (Klin. Wochenschr. 3:2, 1924, p. 2380.)

Table No. 8. NUMBER OF YOUTH OF EACH SEX BLINDED BY HEREDITARY OCULAR DISEASE AMONG 849 YOUNG BLIND STUDENTS OBSERVED AT THE FEDERAL INSTITUTE FOR THE BLIND AT STEGLITZ-BERLIN BY DR. H. FRESE.

Causes of blindness	Total Number of cases	Number of		Per cent. of 849
		Boys	Girls	
Congenital cataract	40	29	11	4.7
Hydrophthalmus	62	44	18	7.3
Microphthalmus	25	15	10	2.9
Pigmentary degeneration of retina.	11	5	6	1.3
Anophthalmus	1	1		0.1
Coloboma	4	1	3	0.5
Total	143	95	48	16.8

In these times when an earnest effort is being made to put eugenics into practice, it is important to have accurate statistics on hereditary blindness. It has been repeatedly stated that the U. S. Census on Blindness is worthless; we have therefore in this country only guesses as to the amount of hereditary blindness existing. It is true that our figures are small but they are valuable as indicators. Although possessing figures on 6000 blind adults we were unable to use them in these statistics on hereditary blindness because the changes of hereditary blindness are too frequently overlooked in a hasty examination.

826 Metropolitan Bldg.

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L LAMB, H. D. M. D.

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